SIEMENS

LITHOSTAR Multiline

SP

Start-up Instructions

System Configuration with SSW VD02A (47 96 970)
System Configuration with SSW VE00J (58 95 748)

For generator:
POLYDOROS SX 65

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Text Emphasis

⚠WARNING	**"Warnings" are information provided with special emphasis when there is the potential for personal injury to the operator or patient.**
CAUTION	**"Cautions" are information provided with special emphasis when there is the potential for damage to the equipment.**
NOTICE	**"Notices" are information provided with special emphasis to facilitate proper use of the equipment or proper execution of a procedure.**

Safety-technical Information

- The safety information RA0-000.012... filed in the system manual must be adhered to.
- Checks and adjustments that must be performed under radiation are labeled in the instructions with the radiation warning symbol ☢ . Take the appropriate radiation protective measures while performing them (refer to ARTD 002.731.02...).

Prerequisites and Remarks

NOTICE	**For the tools and test equipment required, refer to the respective LITHOSTAR Multiline Start-up Instructions...**

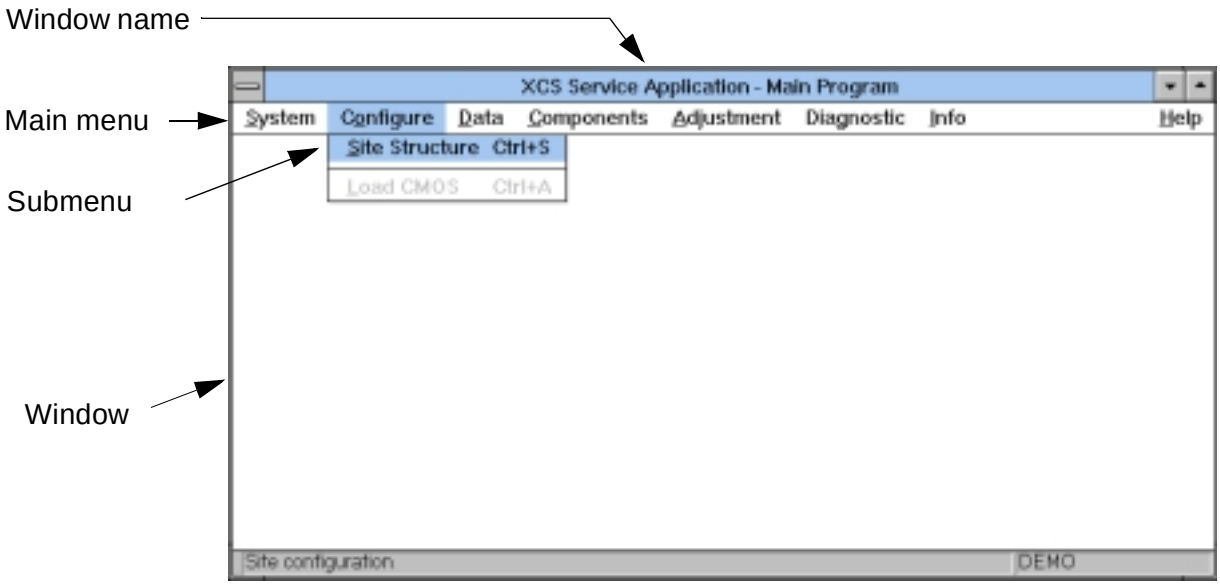
- Prerequisites for configuring the system using the Service PC are:
  - Basic knowledge such as PC handling and operation of the Windows program.
  - Service PC, see ARTD-001.719.06.04.02.
  - Completion of the POLYDOROS SX 65/80 "RXP 231" training course
- The service software diskettes are included in the delivery (system manual).
- Programming the options:

  POLYDOROS SX 65/80
  - 80 kW
  - Fluoroscopy
  - Data printer

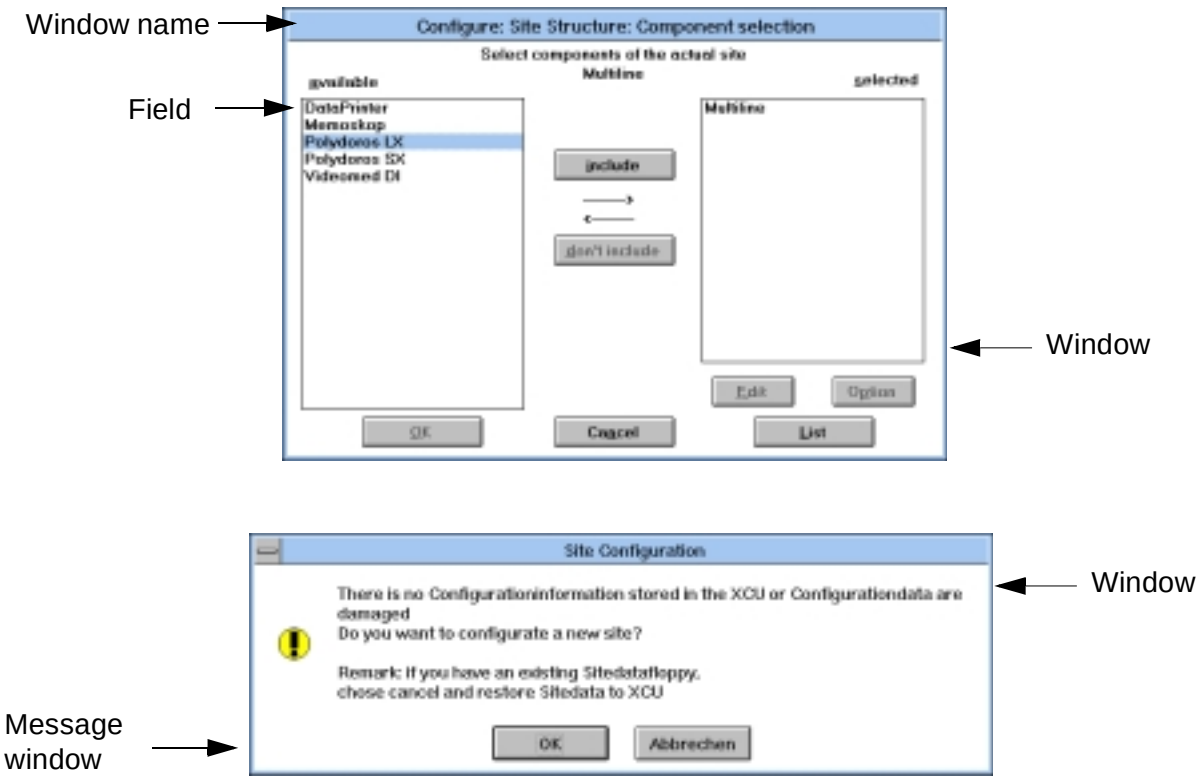
is permitted only if the respective license is in effect.
The license is supplied along with the BZ order form and is filed in the system manual.

Legend

Example of Text Descriptions:

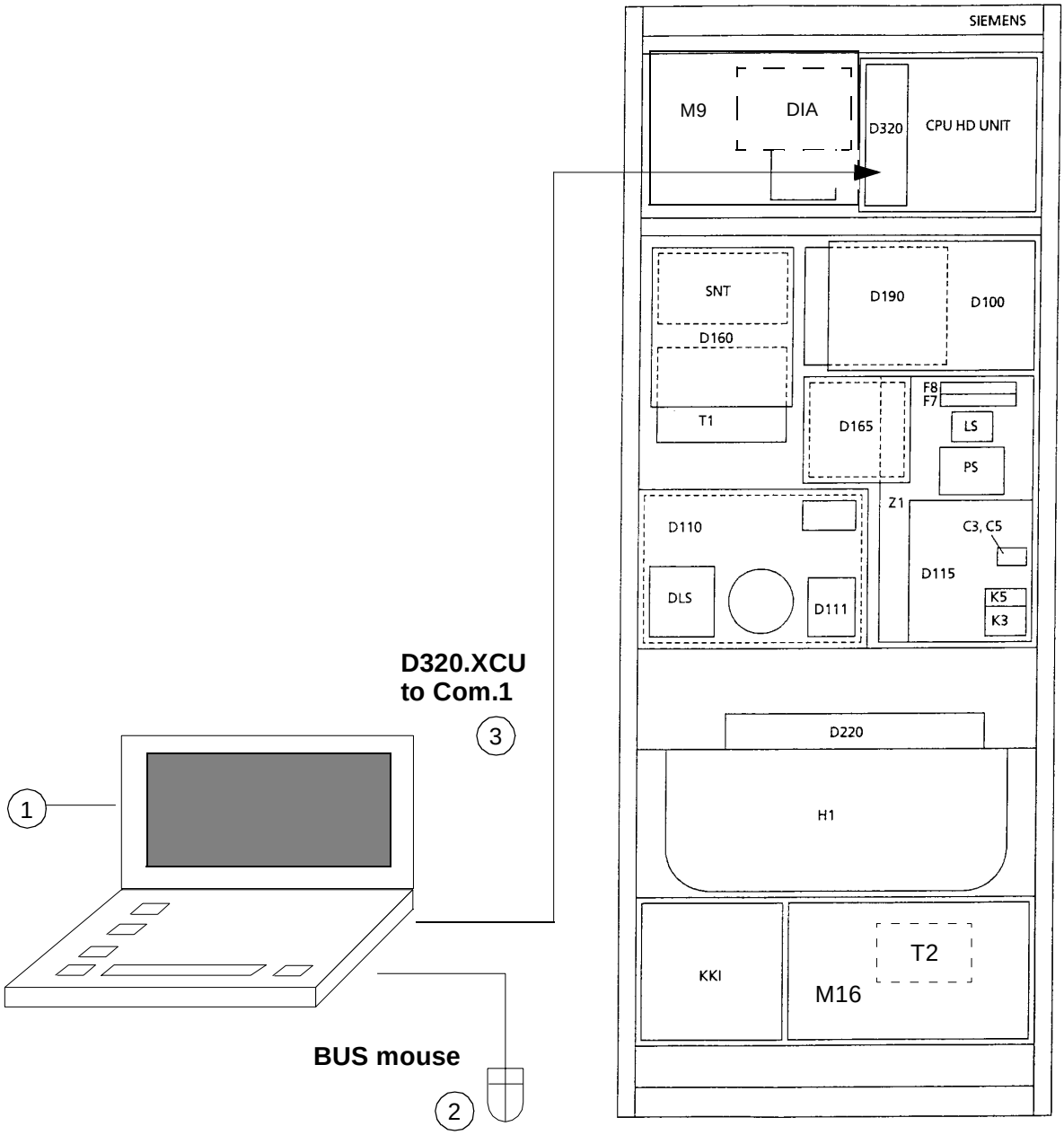


- Select components in the "available" field located in the "Configure:Site Structure:Component selection" window.



- Exit the window with **OK**.

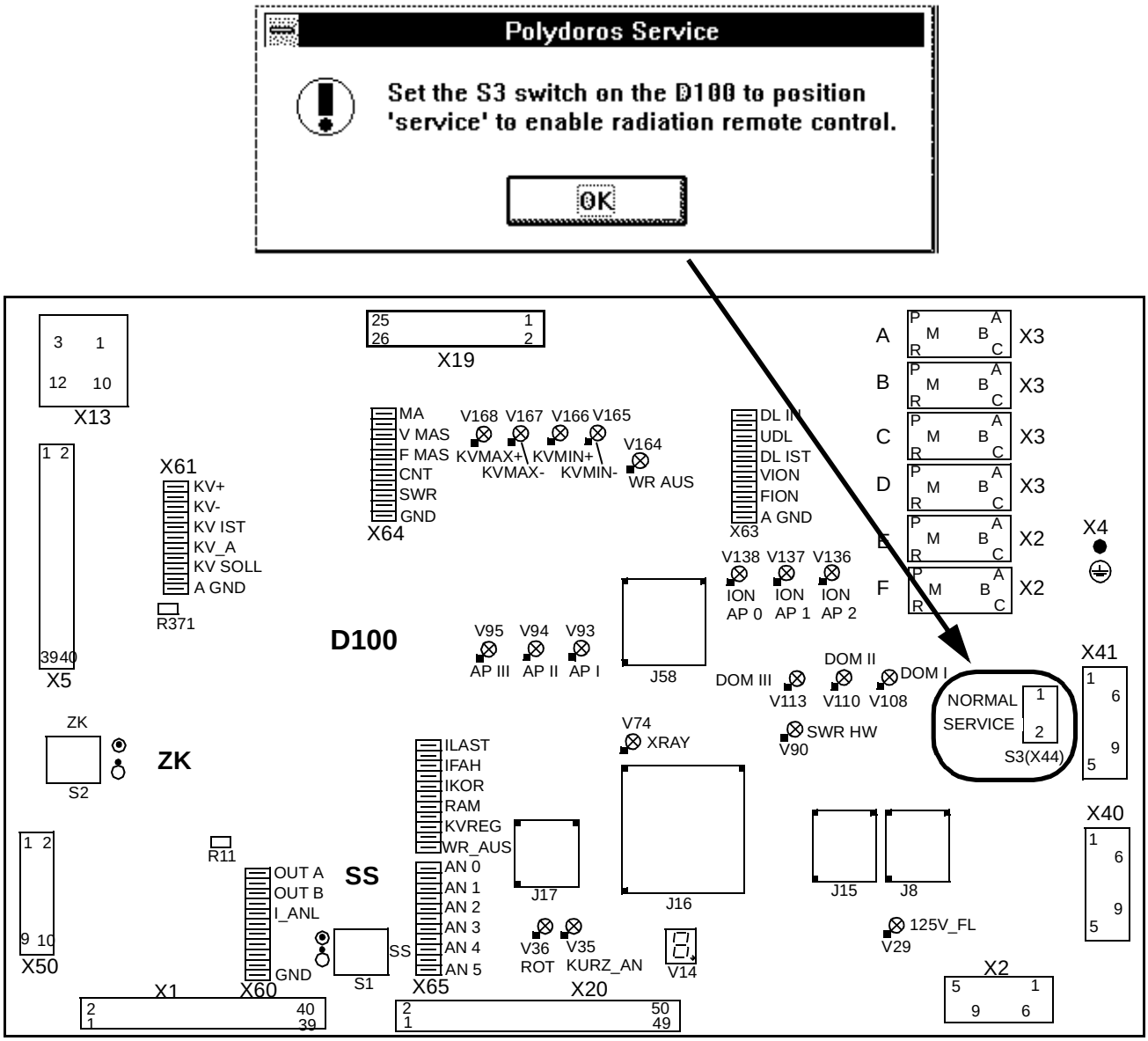
POLYDOROS SX 65/80



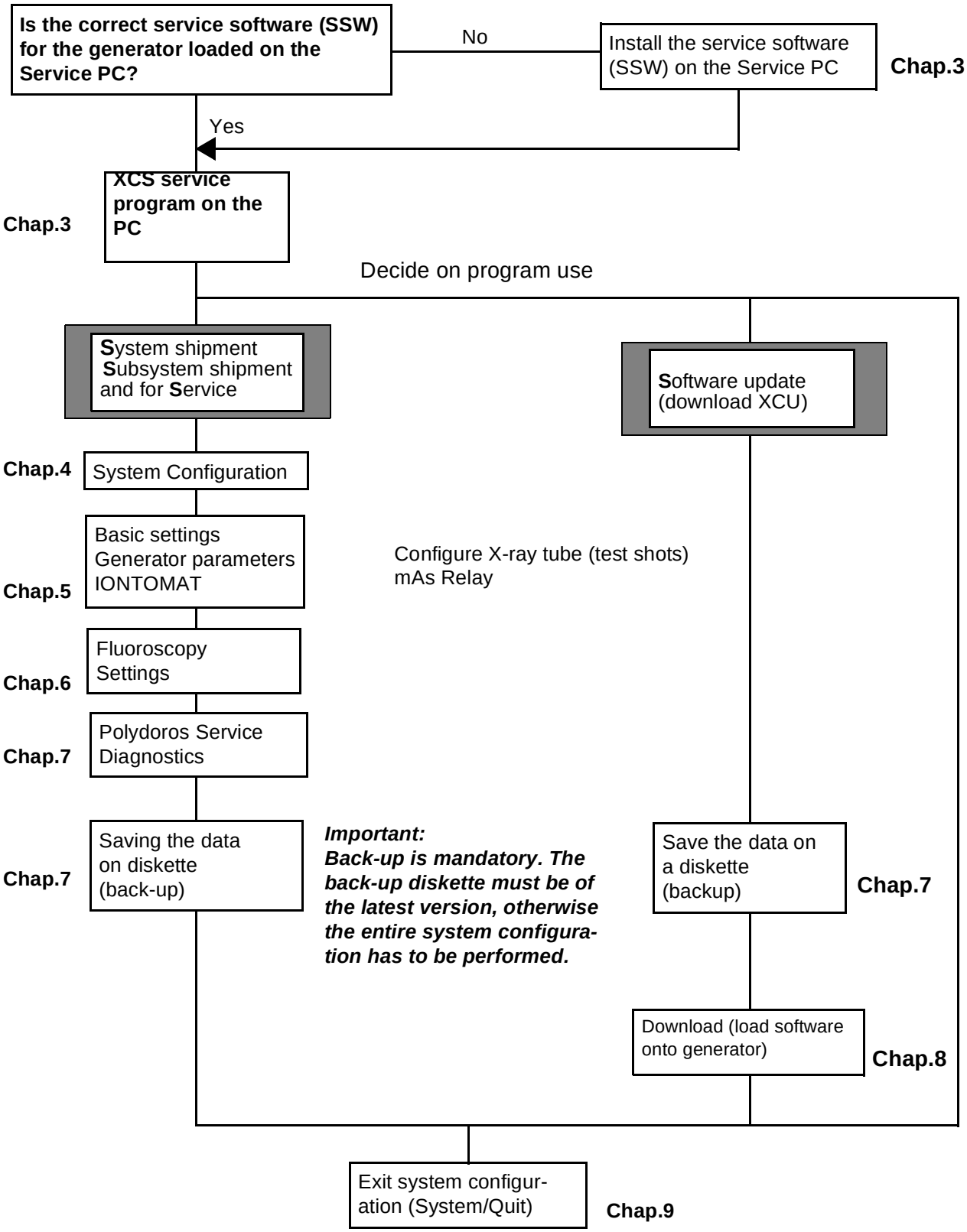
Important:

- ***Connect the system controller (D320.XCS) to Com 1.***
- ***Connect the PC mouse to the PC BUS mouse connector.***

Setting the S3 switch on D100 for POLYDOROS Service Adjustment

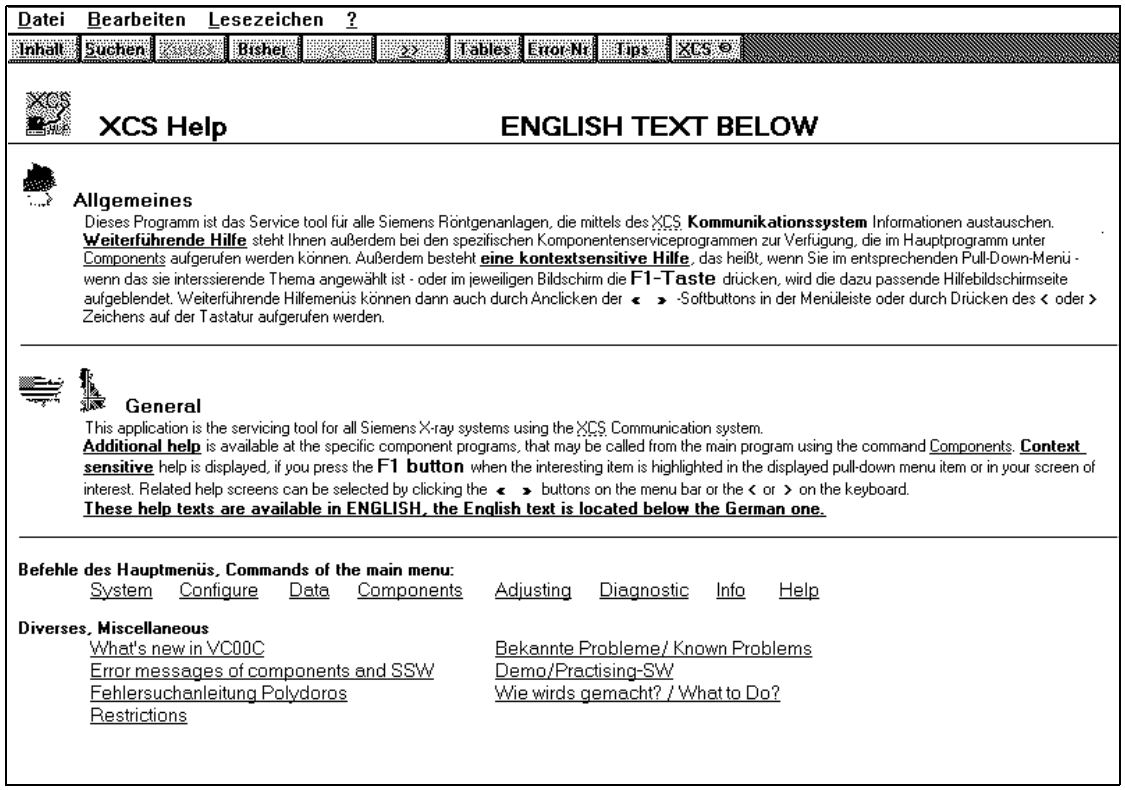


NOTICE **This flowchart is intended as a roadmap only. System configuration should be performed according to the chapters listed below.**



Help Text

- Select **"Help/Index"** in the main menu.


Datei Bearbeiten Lesezeichen ?
Inhalt Suchen Zurück Bisher << >> Tables Error Nr Tips XCS ©
XCS Help
ENGLISH TEXT BELOW
Allgemeines
Dieses Programm ist das Service tool für alle Siemens Röntgenanlagen, die mittels des XCS Kommunikationssystem Informationen austauschen.
Weiterführende Hilfe steht Ihnen außerdem bei den spezifischen Komponentenserviceprogrammen zur Verfügung, die im Hauptprogramm unter Components aufgerufen werden können. Außerdem besteht eine kontextsensitive Hilfe, das heißt, wenn Sie im entsprechenden Pull-Down-Menü - wenn das sie interssierende Thema angewählt ist - oder im jeweiligen Bildschirm die F1-Taste drücken, wird die dazu passende Hilfebildschirmseite aufgeblendet. Weiterführende Hilfemenüs können dann auch durch Anclicken der « » -Softbuttons in der Menüleiste oder durch Drücken des < oder > Zeichens auf der Tastatur aufgerufen werden.
General
This application is the servicing tool for all Siemens X-ray systems using the XCS Communication system.
Additional help is available at the specific component programs, that may be called from the main program using the command Components. Context sensitive help is displayed, if you press the F1 button when the interesting item is highlighted in the displayed pull-down menu item or in your screen of interest. Related help screens can be selected by clicking the « » buttons on the menu bar or the < or > on the keyboard.
These help texts are available in ENGLISH, the English text is located below the German one.
Befehle des Hauptmenüs, Commands of the main menu:
System Configure Data Components Adjusting Diagnostic Info Help
Diverses, Miscellaneous
What's new in VC00C
Error messages of components and SSW
Fehlersuchanleitung Polydoros
Restrictions
Bekannte Probleme/ Known Problems
Demo/Practising-SW
Wie wirds gemacht? / What to Do?

NOTICE	**A help text can be called up for every active window by pressing the F1 key.**

Installing the XCS-Service Software on the Service PC

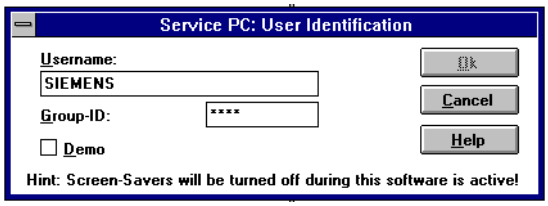
CAUTION	**Do not overwrite the old "C:\SSW\XCS-Serv" directory, erase it. Installation is carried out automatically.**

- Insert the SSW diskette **1+** into the **A:** drive.
- Select the File Manager in Windows.
- Select / **perform** the "File" menu.
- In the "command line", enter **A:\install** and confirm with **OK**.
- Confirm the message window with **OK**.
  - A prompt to insert the corresponding diskette will appear.
- Confirm the following window with **OK**.
- The software will then create the **SERVICE** program group.

NOTICE	**C:\ SSW is preprogrammed. Do not modify it.**

Selecting the XCS Service Program

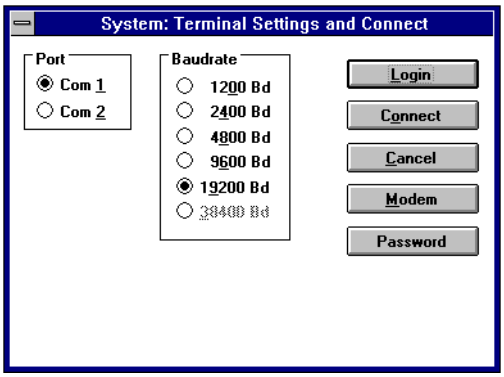
- Select the **Program Manager** (if not displayed).
- Double click the **XCS-SERVICE** pictogram (icon) to select it.



- Enter the user name: **Name**.
- Enter the Group ID: **"_siemens"**.

NOTICE	**If "Demo" is checked off, the software can work without the XCU. In the "Demo function", communication with the XCU is not possible.**

- Exit the window with **OK**.



NOTICE

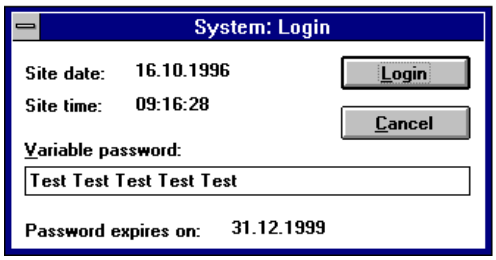
- When Connect is selected in the "System" menu, Realtime CI (clock time for the XCU) and ID code are enabled.

- Exit the window with **Login**.
  (The connection to the XCU is established when **Login** is selected.)
- If communication problems occur during “Log in”, Windows must be started from DOS using C:Win ␣ /3.
  - Set the baud rate from 19200 to 9600 and repeat the Login.

NOTICE

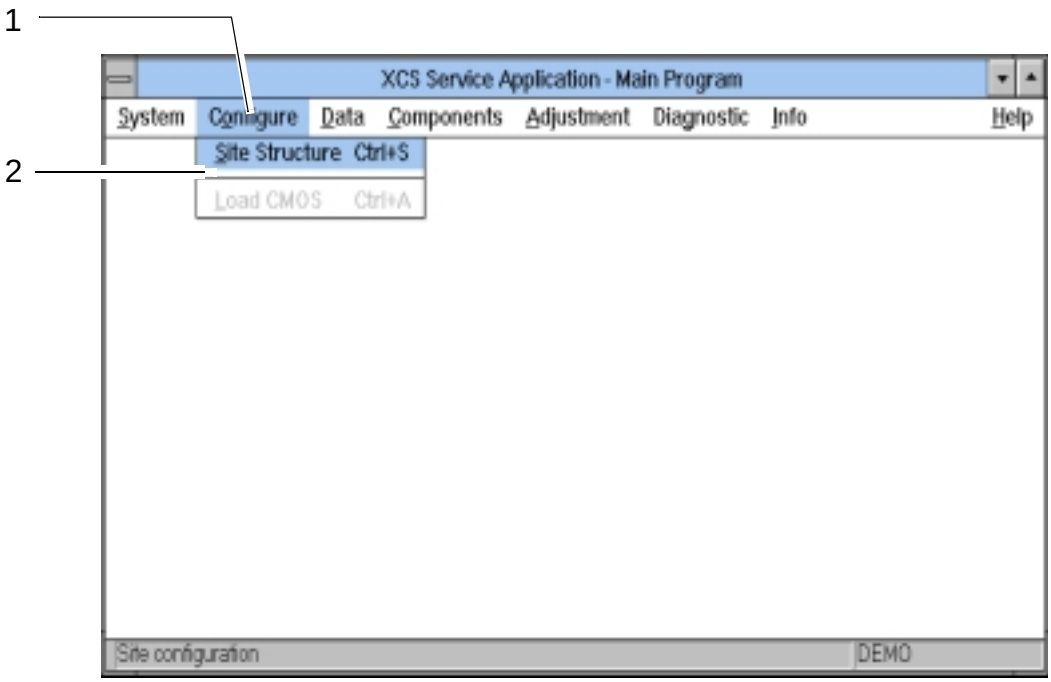
A help text can be obtained for every active window by pressing the F1 key.

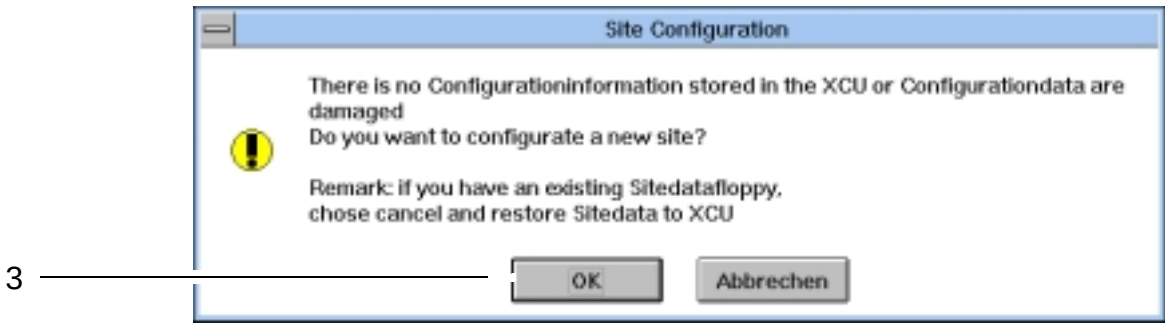
If the password field is empty, obtain the password from the last Speed info with the title "Password Speed info".



POLYDOROS SX

NOTICE	**The reference numbers "1" through "n" indicate the sequence of individual work steps.**

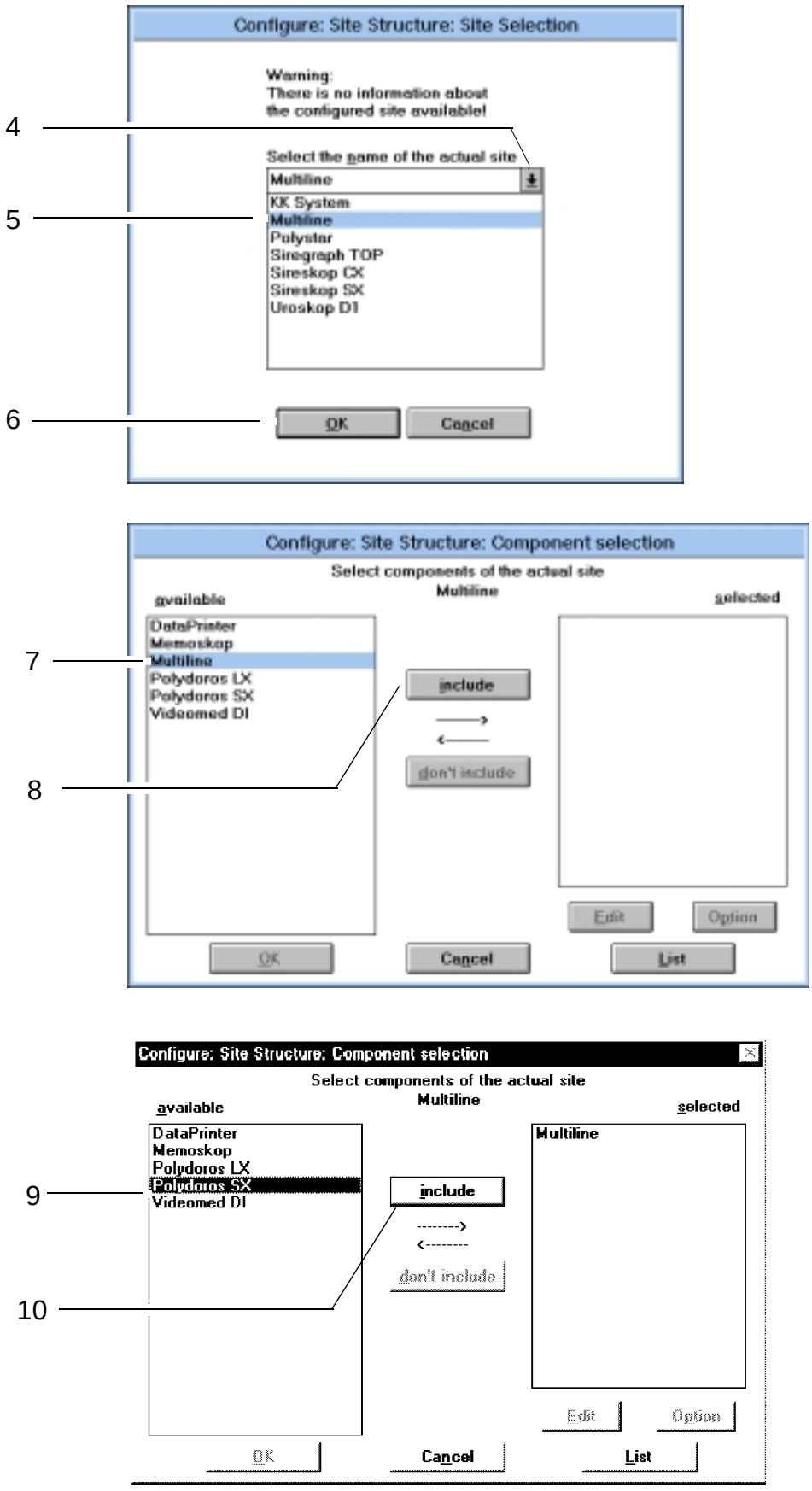


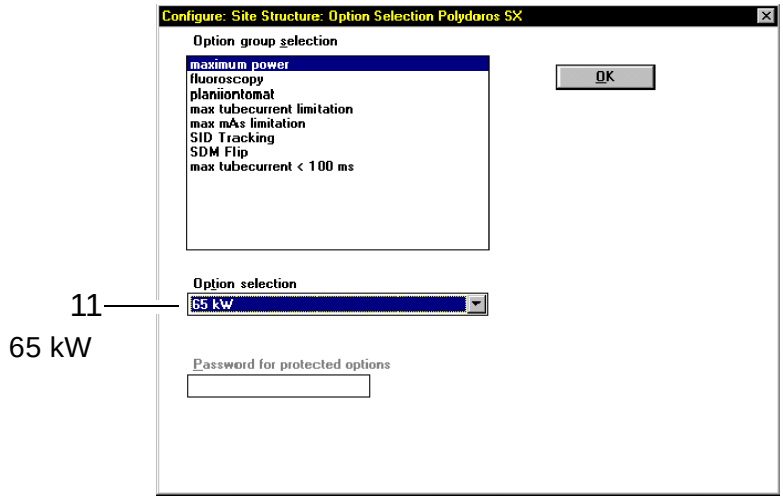

3
Site Configuration
There is no Configurationinformation stored in the XCU or Configurationdata are damaged
Do you want to configurate a new site?
Remark: if you have an existing Sitedatafloppy,
chose cancel and restore Sitedata to XCU
OK
Abbrechen

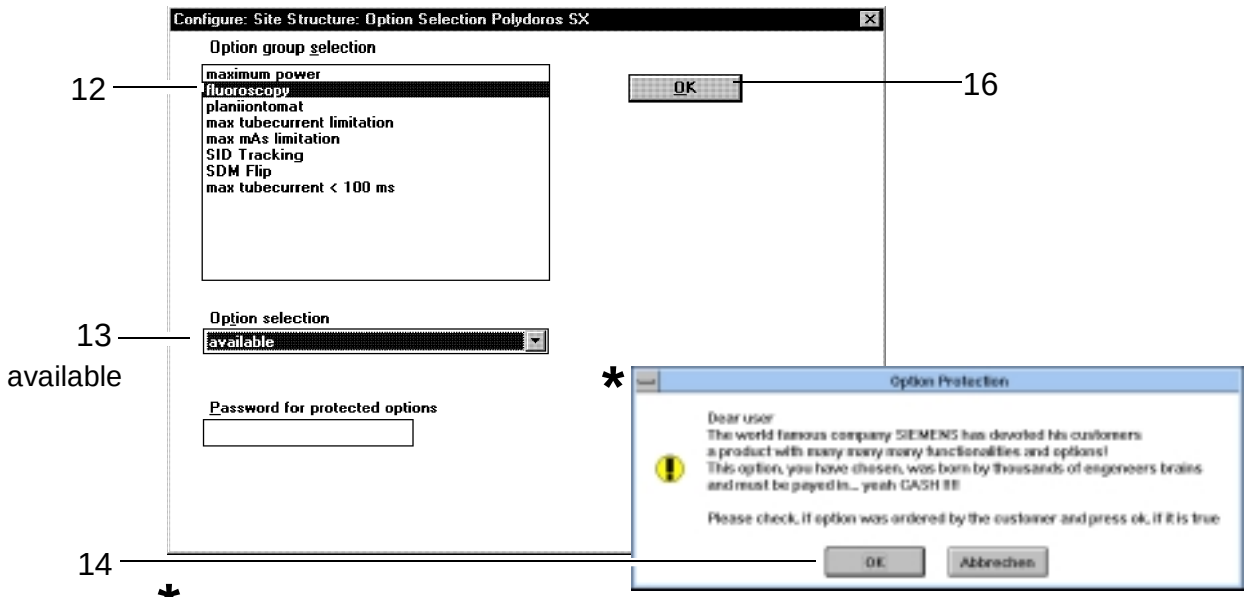
This window appears only if there is no configuration present in the XCU.
(The display on D100 indicates "2").
Exit the window with OK.

System selection

Help texts for configuration are available by pressing the F1 key.
If a system-tested system has crashed, download the configuration from the back-up floppy. Use the "Data Restore" menu.


Configure: Site Structure: Site Selection
Warning:
There is no information about
the configured site available!
Select the name of the actual site
Multiline
KK System
Multiline
Polystar
Siregraph TDP
Sireskop CX
Sireskop SX
Uroskop DI
OK
Cancel
4
5
6
Configure: Site Structure: Component selection
Select components of the actual site
Multiline
available
selected
DataPrinter
Memoskop
Multiline
Polydoros LX
Polydoros SX
Videomed DI
include
don't include
Edit
Option
OK
Cancel
List
7
8
Configure: Site Structure: Component selection
Select components of the actual site
Multiline
available
selected
DataPrinter
Memoskop
Polydoros LX
Polydoros SX
Videomed DI
Multiline
include
don't include
Edit
Option
OK
Cancel
List
9
10

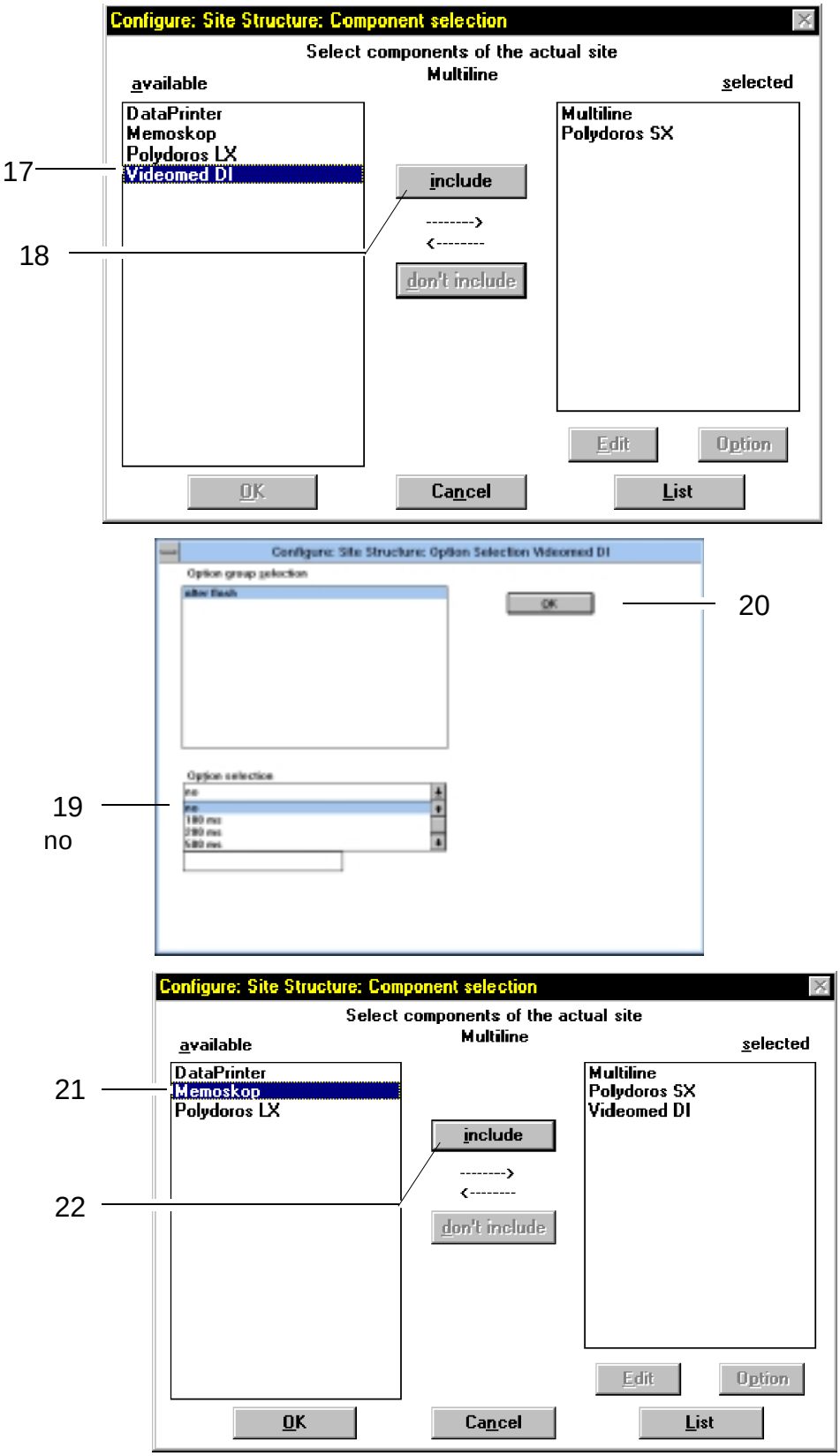




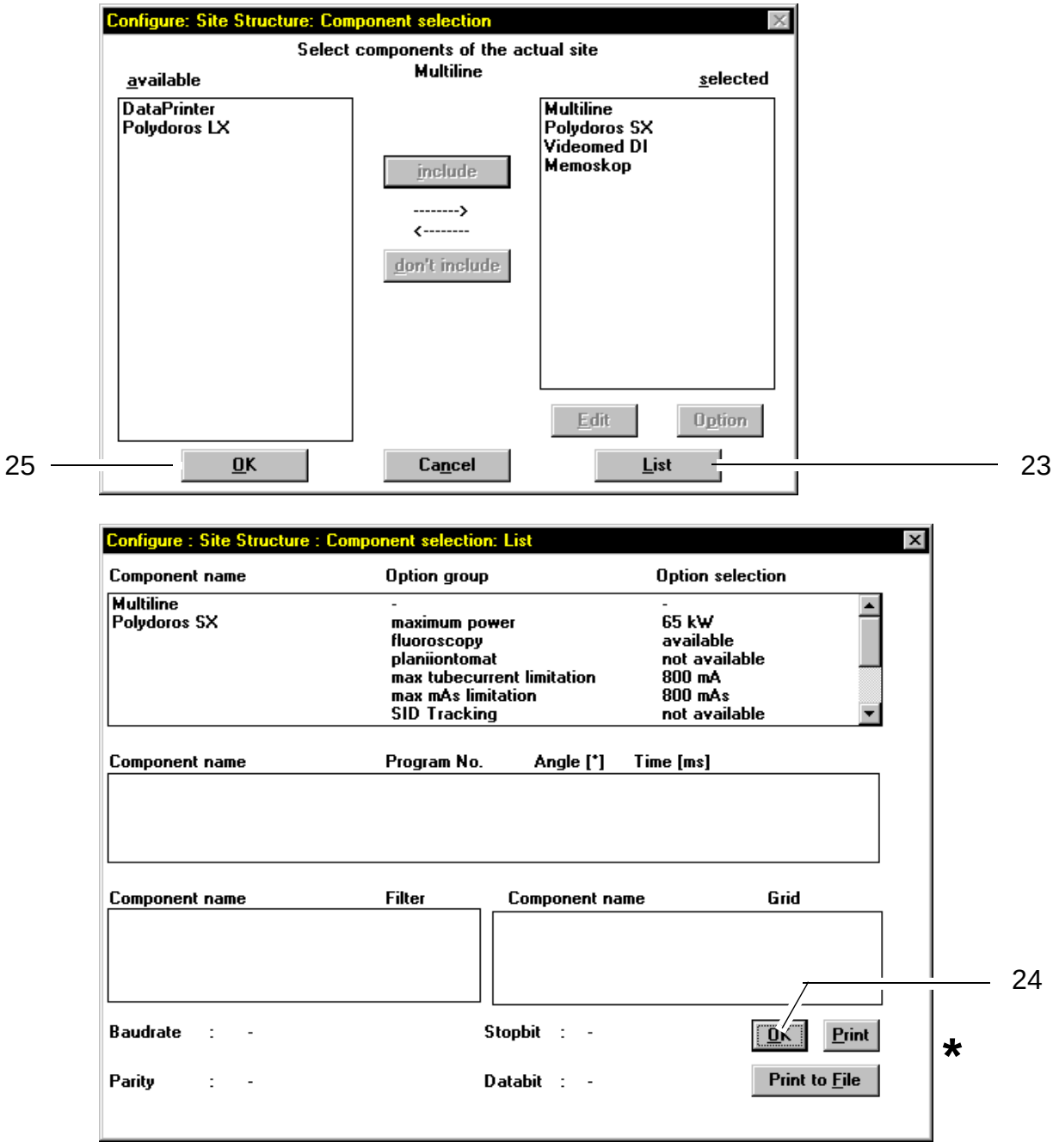
* Text differs depending on the software version.

15 — Check the additional options and change, if necessary

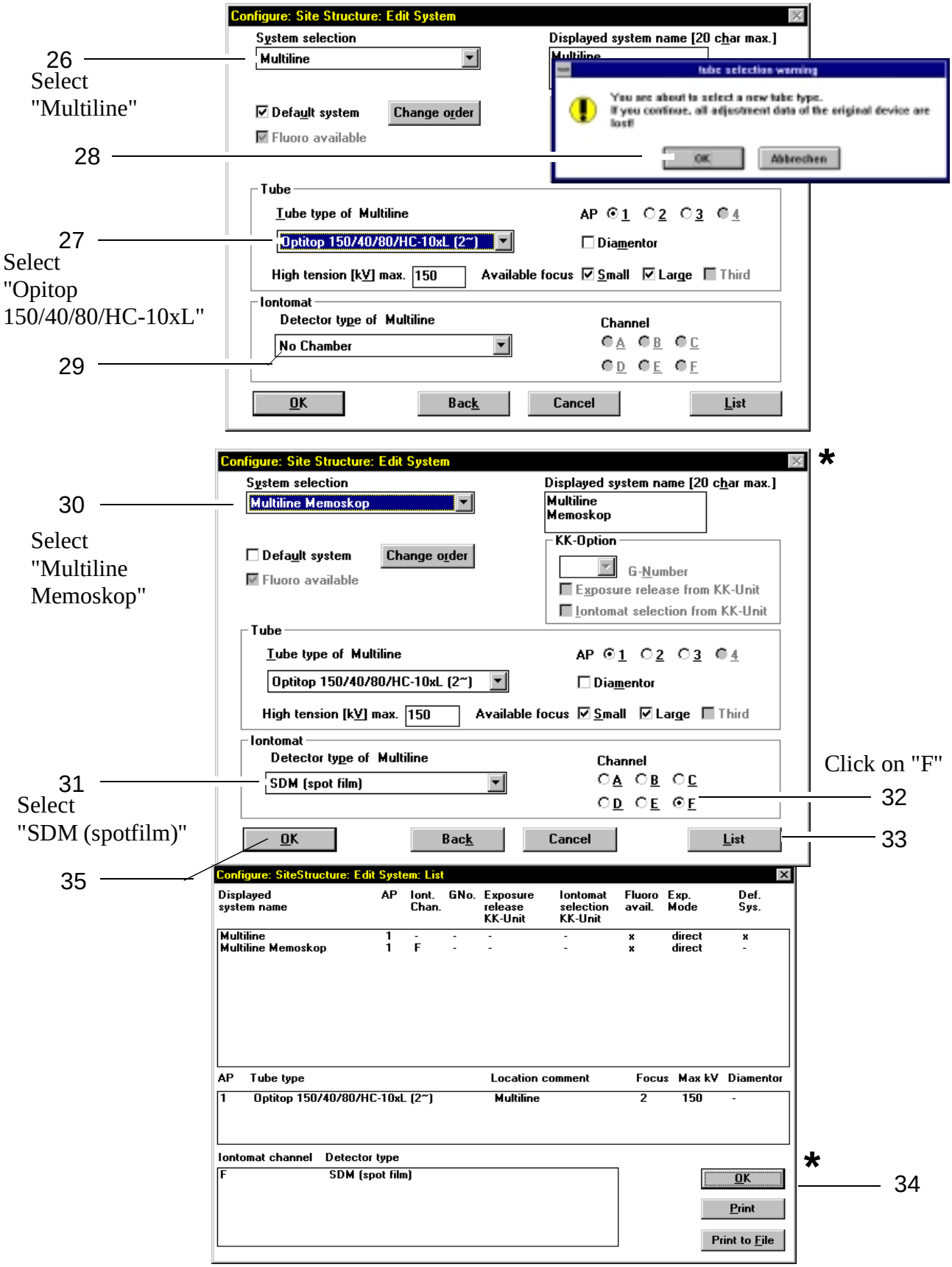
Additional options	**Default**
planiiontomat	not available
max tubecurrent limitation	800 mA
max mAs limitation	800 mAs
SID Tracking	not available
SDM Flip	not available
max tubecurrent < 100 ms	1000 mA at VD02A 800 mA at VE00J



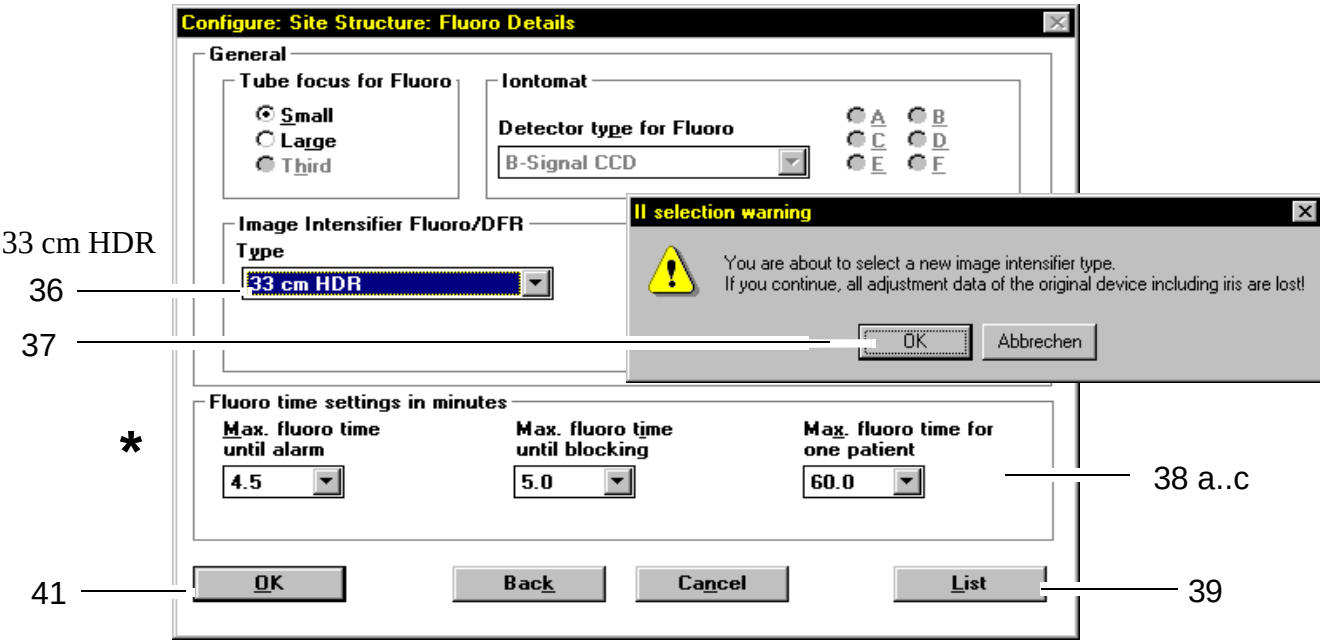
The configuration will be interupted unless all necessary components are selected.



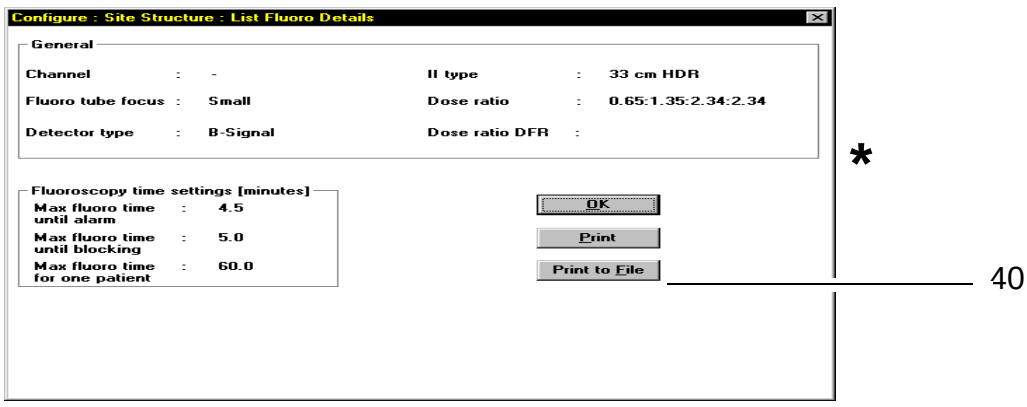
* Location of the symbols varies depending on software version.



* Depending on the SW version, additional symbols are available in the form.



Max. fluoro time until alarm: (only VD02A)	Set according to country-specific regulations, e.g. BRD 4.5 min.; GB 9.5 min. (37 a)
Max. fluoro time until blocking: (only VD02A)	When should FL be shut down without buzzer deactivation? e.g. BRD 5 min.; GB 10 min. (37 b)
Max. fluoro time for one patient: (only VD02A)	When should FL be shut down completely? (37 c)
Cumulated Fluoro time until alarm: (only VE00J)	Set according to country-specific regulations, no shutdown - only alarm
Max. fluoro time without interrupt: (only VE00J)	10.0; disabled e.g. shutdown after 10 min. **continuous** fluoroscopy


Configure : Site Structure : List Fluoro Details
General
Channel : -
II type : 33 cm HDR
Fluoro tube focus : Small
Dose ratio : 0.65:1.35:2.34:2.34
Detector type : B-Signal
Dose ratio DFR :
Fluoroscopy time settings [minutes]
Max fluoro time until alarm : 4.5
Max fluoro time until blocking : 5.0
Max fluoro time for one patient : 60.0
OK
Print
Print to File
*
40

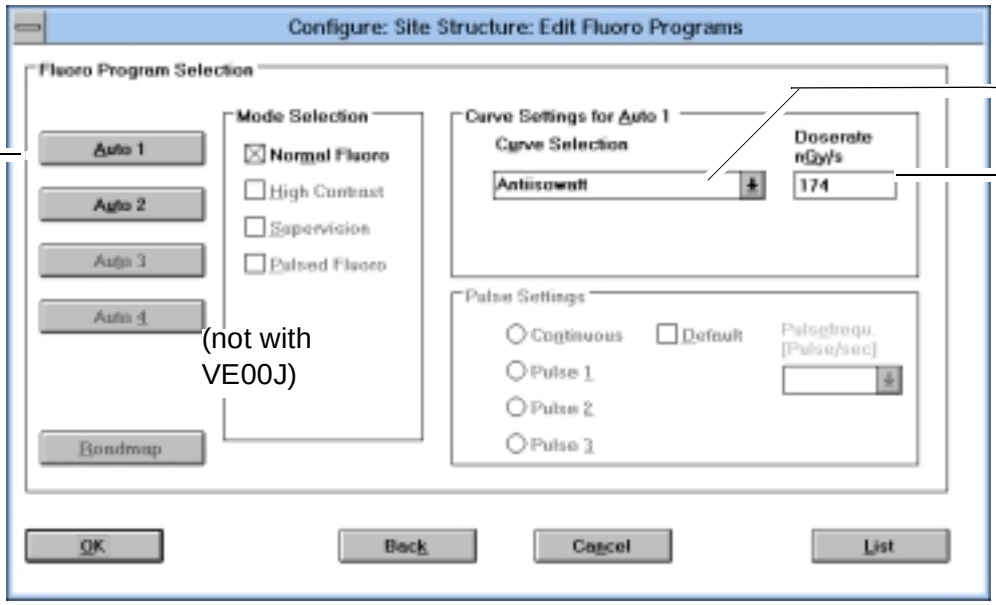
NOTICE

Dose Rate Fluoro, Dose Rate DFR und Dose rate can be edited: If you wish to set different dose values in zoom mode, you must adjust the zoom ratios accordingly.

* Depending on the software version, different symbols are available.

If the adjacent message appears when selecting a fluoro curve, click on OK.

curve selection warning
You are about to select a new fluoro curve.
If you continue, all adjustment data e. g. skin dose rate are lost!
OK
Abbrechen



42

43

44

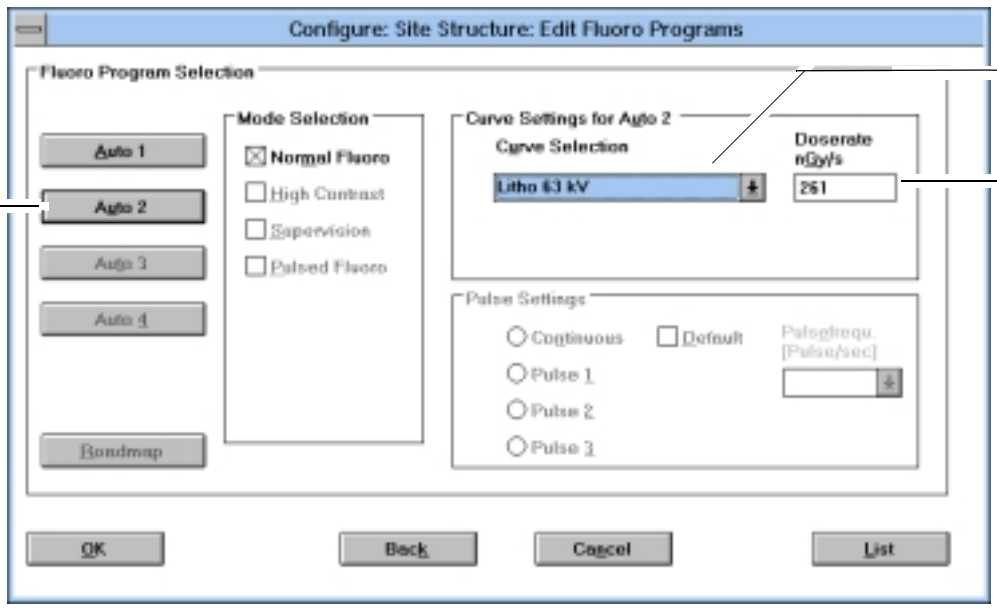
Select "Antiisowatt"

Enter "113"

(not with VE00J)

(not with VE00J)

- The "Mode Selection" field varies depending on the software. With VE00J, "Normal Fluoro" is designated "Cont. Fluoro".



45

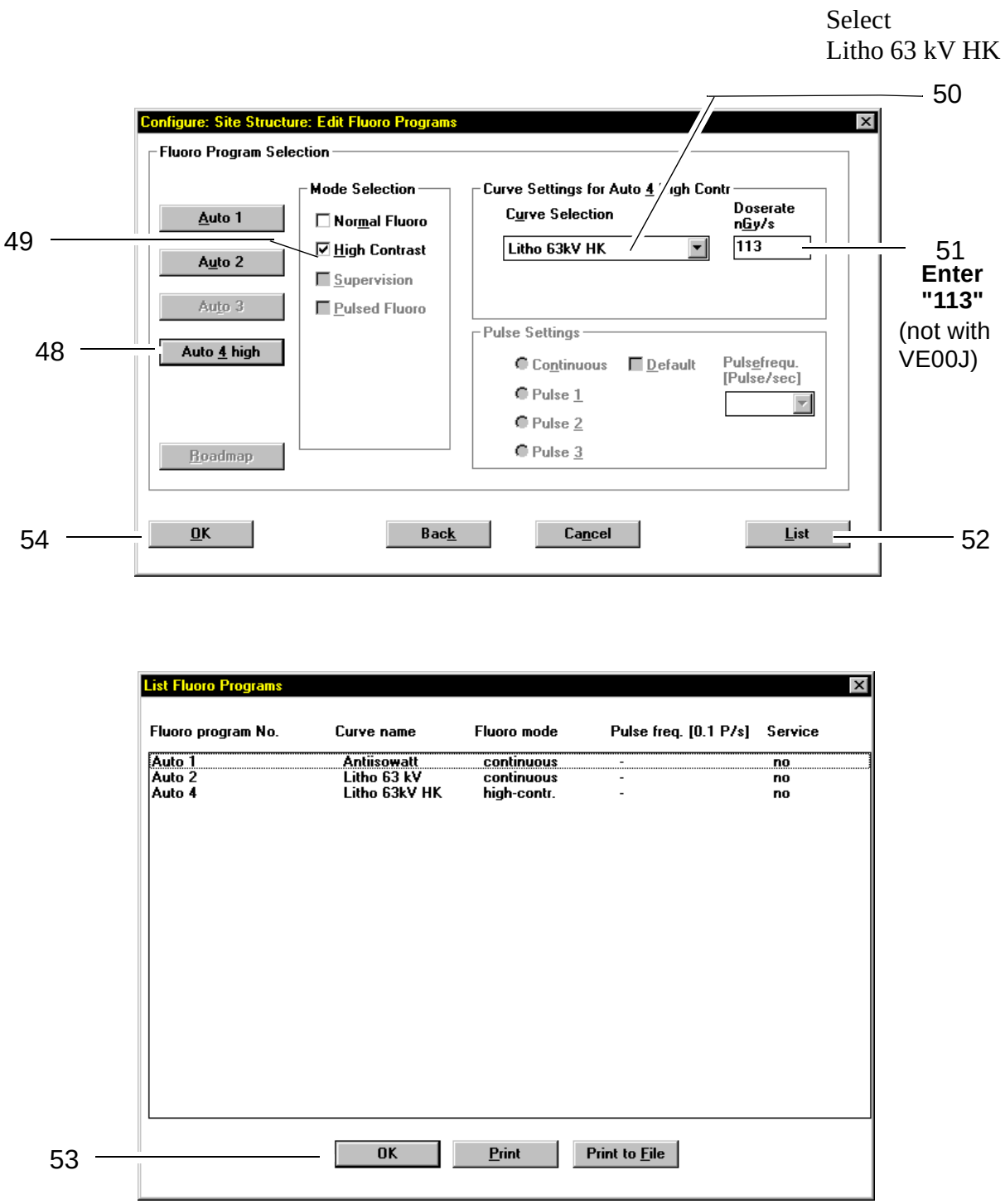
46

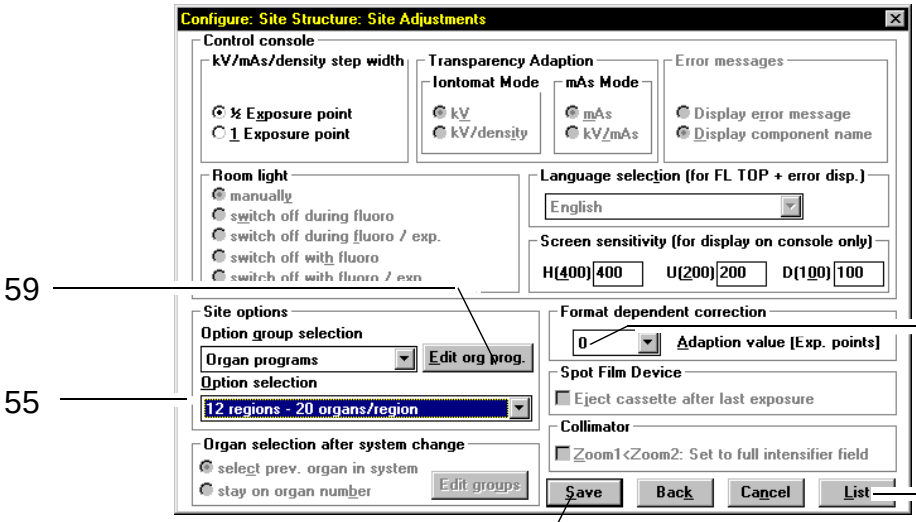
47

Select "Litho 63 KV"

Enter "113"

(not with VE00J)


Select
Litho 63 kV HK
50
Configure: Site Structure: Edit Fluoro Programs
Fluoro Program Selection
Mode Selection
Auto 1
Auto 2
Auto 3
Auto 4 high
Roadmap
Normal Fluoro
High Contrast
Supervision
Pulsed Fluoro
Curve Settings for Auto 4 high Contr
Curve Selection
Litho 63kV HK
Doserate nGy/s
113
Pulse Settings
Continuous
Default
Pulsefrequ. [Pulse/sec]
Pulse 1
Pulse 2
Pulse 3
OK
Back
Cancel
List
49
48
54
51
Enter "113"
(not with VE00J)
52
List Fluoro Programs
Fluoro program No.
Curve name
Fluoro mode
Pulse freq. [0.1 P/s]
Service
Auto 1 Antiisowatt continuous - no
Auto 2 Litho 63 kV continuous - no
Auto 4 Litho 63kV HK high-contr. - no
OK
Print
Print to File
53



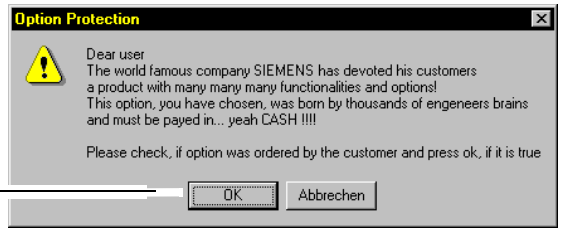
59 — 55 — 73 — 58 — 70

58 Enter "0"

70 Notice Refer to 4-11

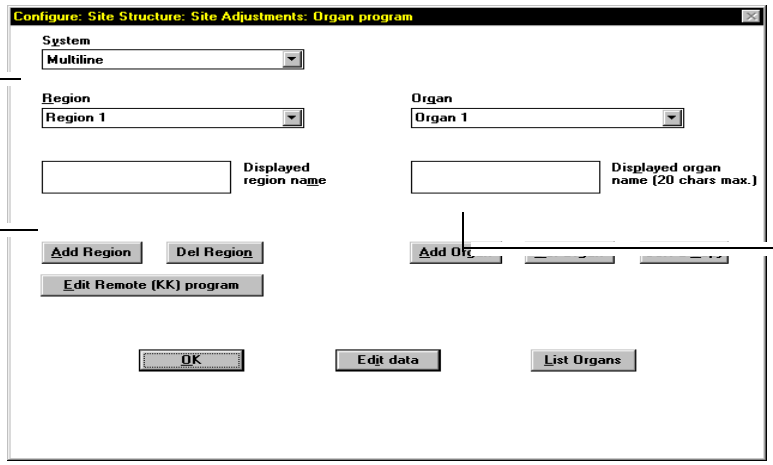
Notice:
For more info, refer to 4-12

72 — Remove the back-up diskette for POLYDOROS LX from Register 10 of the logbook and insert it in the disk drive of the service PC.


Option Protection
Dear user
The world famous company SIEMENS has devoted his customers
a product with many many many functionalities and options!
This option, you have chosen, was born by thousands of engeneers brains
and must be payed in... yeah CASH !!!!
Please check, if option was ordered by the customer and press ok, if it is true
OK
Abbrechen

* — 56

57



60 — 61 — 62

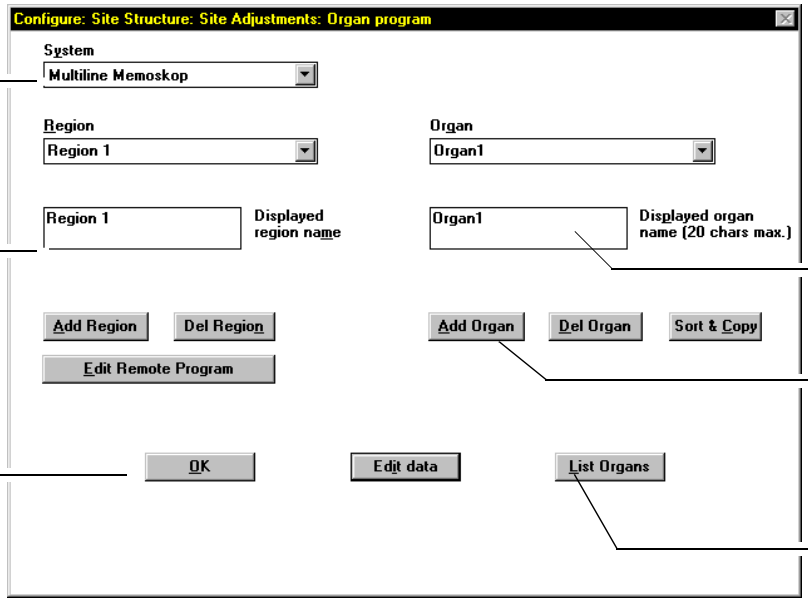
61 Enter "Region 1"

62 Enter "Organ 1"

**

* Text varies depending on the software version.

** Depending on the software version, additional symbols are visible.



63

64 Enter "Region 1"

66 Enter "Organ 1"

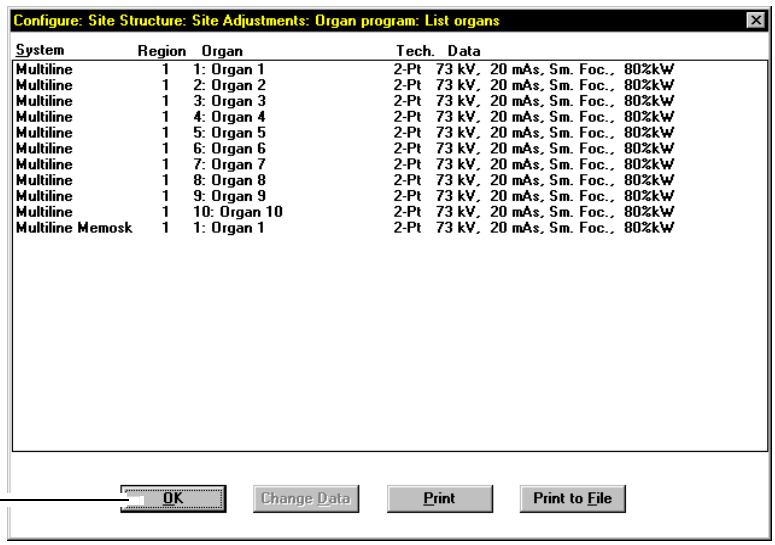
65

*

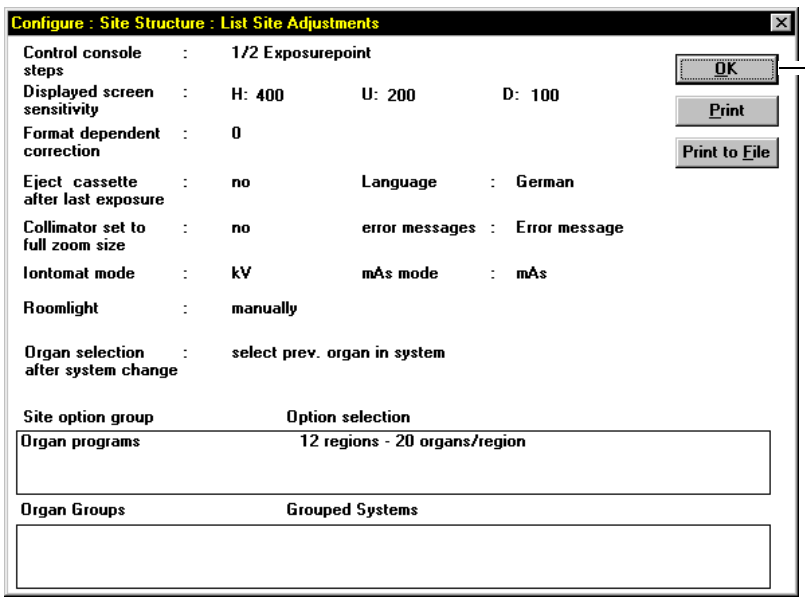
69

Notice: For more information re-

67


Configure: Site Structure: Site Adjustments: Organ program: List organs
System Region Organ Tech. Data
Multiline 1 1: Organ 1 2-Pt 73 kV, 20 mAs, Sm. Foc., 80%kW
Multiline 1 2: Organ 2 2-Pt 73 kV, 20 mAs, Sm. Foc., 80%kW
Multiline 1 3: Organ 3 2-Pt 73 kV, 20 mAs, Sm. Foc., 80%kW
Multiline 1 4: Organ 4 2-Pt 73 kV, 20 mAs, Sm. Foc., 80%kW
Multiline 1 5: Organ 5 2-Pt 73 kV, 20 mAs, Sm. Foc., 80%kW
Multiline 1 6: Organ 6 2-Pt 73 kV, 20 mAs, Sm. Foc., 80%kW
Multiline 1 7: Organ 7 2-Pt 73 kV, 20 mAs, Sm. Foc., 80%kW
Multiline 1 8: Organ 8 2-Pt 73 kV, 20 mAs, Sm. Foc., 80%kW
Multiline 1 9: Organ 9 2-Pt 73 kV, 20 mAs, Sm. Foc., 80%kW
Multiline 1 10: Organ 10 2-Pt 73 kV, 20 mAs, Sm. Foc., 80%kW
Multiline Memosk 1 1: Organ 1 2-Pt 73 kV, 20 mAs, Sm. Foc., 80%kW
OK
Change Data
Print
Print to File

68

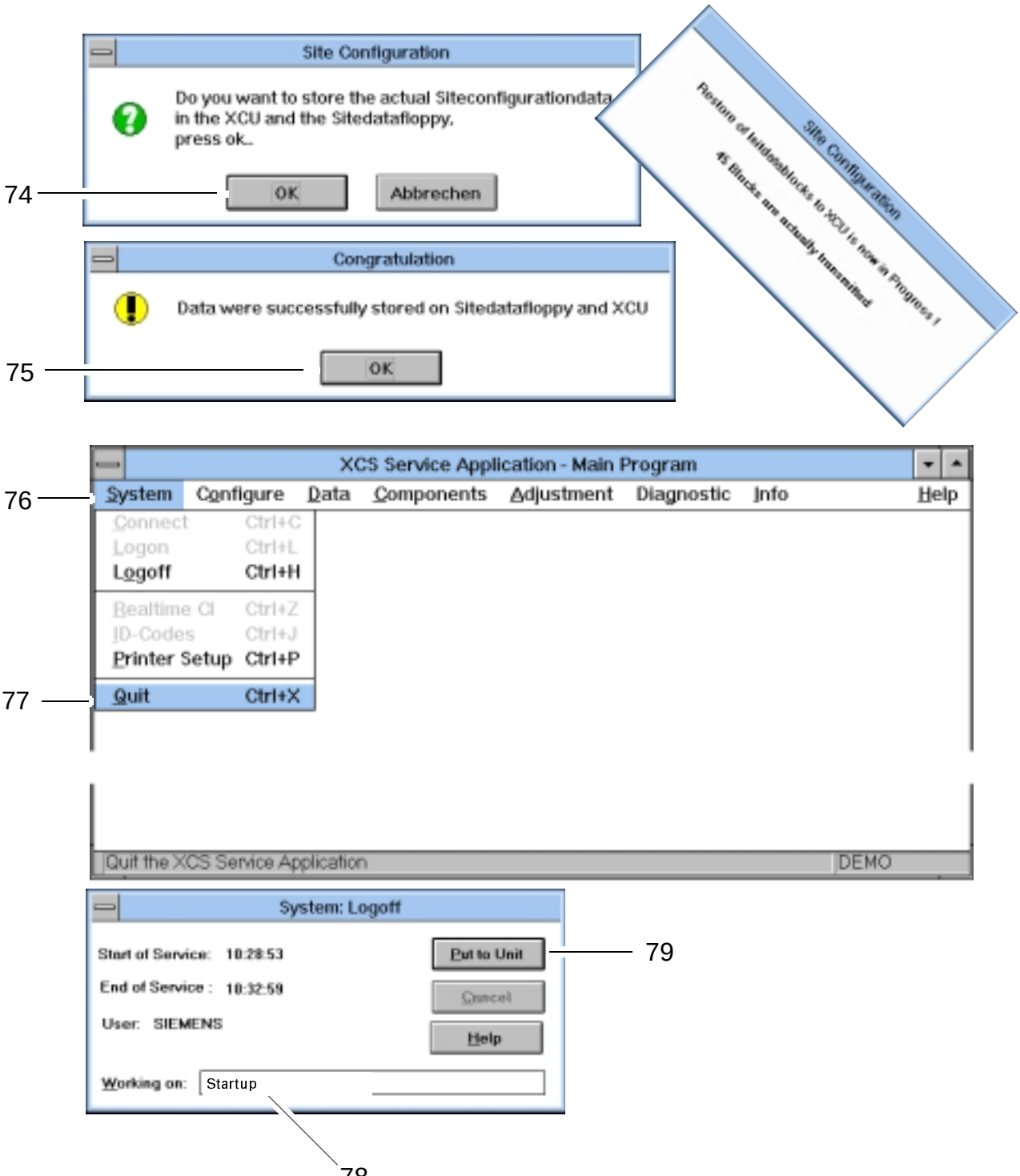

Configure : Site Structure : List Site Adjustments
Control console steps : 1/2 Exposurepoint
Displayed screen sensitivity : H: 400 U: 200 D: 100
Format dependent correction : 0
Eject cassette after last exposure : no Language : German
Collimator set to full zoom size : no error messages : Error message
Iontomat mode : kV mAs mode : mAs
Roomlight : manually
Organ selection after system change : select prev. organ in system
Site option group Option selection
Organ programs 12 regions - 20 organs/region
Organ Groups Grouped Systems
OK
Print
Print to File

71

Notice: For more see 4-10

*

* Depending on the software version, the text and symbols are arranged differently in this field.



Working on: .....
Enter freely selectable text here, e.g. “Start-up”.

This can be read out in the “Main Program / Info”.

80 —— Generator **OFF / ON**

NOTICE

- **<u>For pre-staged systems,</u> only the following points in this chapter need to be performed:**
  1. Iontomat sensitivity
  2. Voltage Response Corr
- **A help text can be selected for every active window by pressing the F1 key.**

- Select **Polydoros ..** in the "XCS Service Application-Main Program\Components\ window".
- Set the S3 (X44) switch on D100 to Service (for illustration, refer to page 1-4).
- Exit the message window (Service switch D100.S3) with **OK**.

Generator Parameters

- Select **Generator Parameters** in the "Polydoros .. Service\Adjustment\" window.
- Select 24 m for the high voltage cable lengths in the "Generator Parameters" window.
- Exit the window with **OK**.

X-Ray Tube Adjustment

(Refer to the Multiline Start-up Instructions RXL2-120.034...)

- Select **Warm UP** in the "Polydoros .. Service\Adjustment\" window.
- Exit the message window with **OK**.

CAUTION **Close the collimator and cover the I.I. with a lead apron.**

- Switch fluoro **ON** in the "Warm Up" window. **After 10 min.,** fluoro switches off automatically.
- Exit the window with **OK**.
- The adjustment points: " Pre-Heating, Filament Correction, Filament Pushcurrent" are performed by the software. Switch on fluoroscopy or exposure in the window until the "**OK Button"** is active.

NOTICE **First the small focus and then the large focus is calibrated (conditioned).**

- Exit the window with **OK**.

mAs Relay Adjustment

- Select **mAs Relay Adjust** in the "Polydoros .. Service\Adjustment\" window.
- Connect the mAs meter to D220.X16 (mAs test socket).
- Exit the message window with **OK.**.

NOTICE

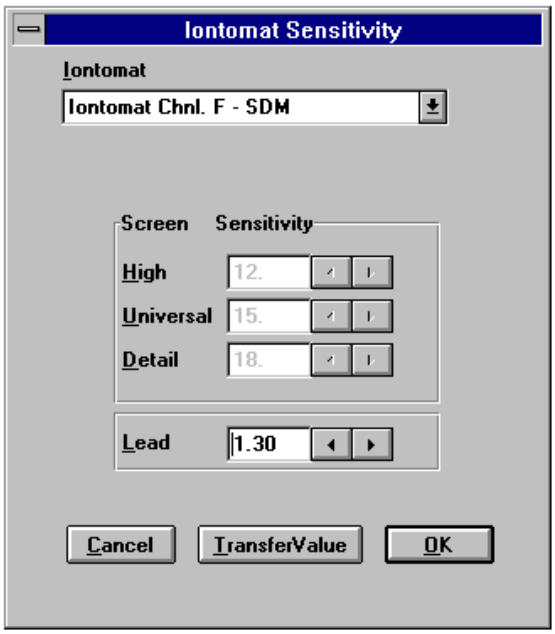
Perform the mAs relay adjustment:
1. During startup
2. After replacing the D100
3. If there are deviations in mAs values in "mAs Mode".

- Select **"Exposure ON"**.
- Enter the value measured on the mAS-meter in **"Measured value: ..."** using the arrow keys.
- Exit the window with **OK**.
- Disconnect the mAs meter and reinstall the mAs jumper.

Default for SDM

(For the instant stored image option only, Item No. 47 82 517 J1042)

- Select the "Polydoros .. -Service/Adjustment/**Iontomat Sensitivity**" window.



Program + 1.3 (default for SDM)

- Exit the window with OK.

NOTICE

The data may be updated in the XCU with "Transfer Value" allowing test exposures to be made without exiting the service software window.

Fluoroscopy Dose Rate

Basic remarks pertaining to measurement of dose or dose rate at image intensifier workstations

To determine the dose at the I.I. input (K_B) or the dose rate at the I.I. input ($\dot{K}_B$), center the dose measurement chamber in the beam and as close as possible to the I.I.; if the system is equipped with a spotfilm device, place it in the cassette slot.
If this is not possible, measure the dose (K_{Tg}) or the dose rate ($\dot{K}_{Tg}$) before the attenuating elements:

- With OT units, on the tabletop
- With UT units, on the back wall of the spotfilm device
- With C-Arm units, on the grid

The value at the I.I. input is calculated using the correction factor m (equipment attenuation factor).
The equipment attenuation factor comprises all attenuating elements located between the patient and the image receptor including the distance factor; the factor is listed in the equipment test protocols. It can also be calculated by multiplying the attenuation factors of all the individual elements.
In addition, factor in a radiation attenuation of 6% for the dose measurement chamber (factor 0.94).

Determining Dose/Dose Rate directly at the I.I. Input

	Dose		Dose Rate
Measurement chamber in I.I. plane	$K_B = K_{Bg} \times 0{,}94$	;	$\dot{K}_B = \dot{K}_{Bg} \times 0{,}94$
Measurement chamber in front	$K_B = \frac{K_{Tg} \times 0{,}94}{m}$	;	$\dot{K}_B = \frac{\dot{K}_{Tg} \times 0{,}94}{m}$

Exception 1: Dose rate measurement when the ADC measurement field is larger than the dose measurement chamber:
Allow ADC to adjust to 2.1 mm Cu filtration. Press STOP ⊽ , then place the dose measurement chamber into the beam and measure the dose rate.
In this instance, the factor 0.94 should not be used.

Exception 2: Dose measurement when the dominant is larger than the dose measurement chamber:
Insert 2.1 mm Cu and place the dose measurement chamber in the beam. Trigger an exposure and measure the dose (K_{Bg} or K_{Tg}) and the mAs value (Q_{g1}). Remove the dosimeter from the beam, trigger an exposure and measure the mAs value (Q_{g2}).
Calculate the dose at the I.I. input (K_B) as follows:

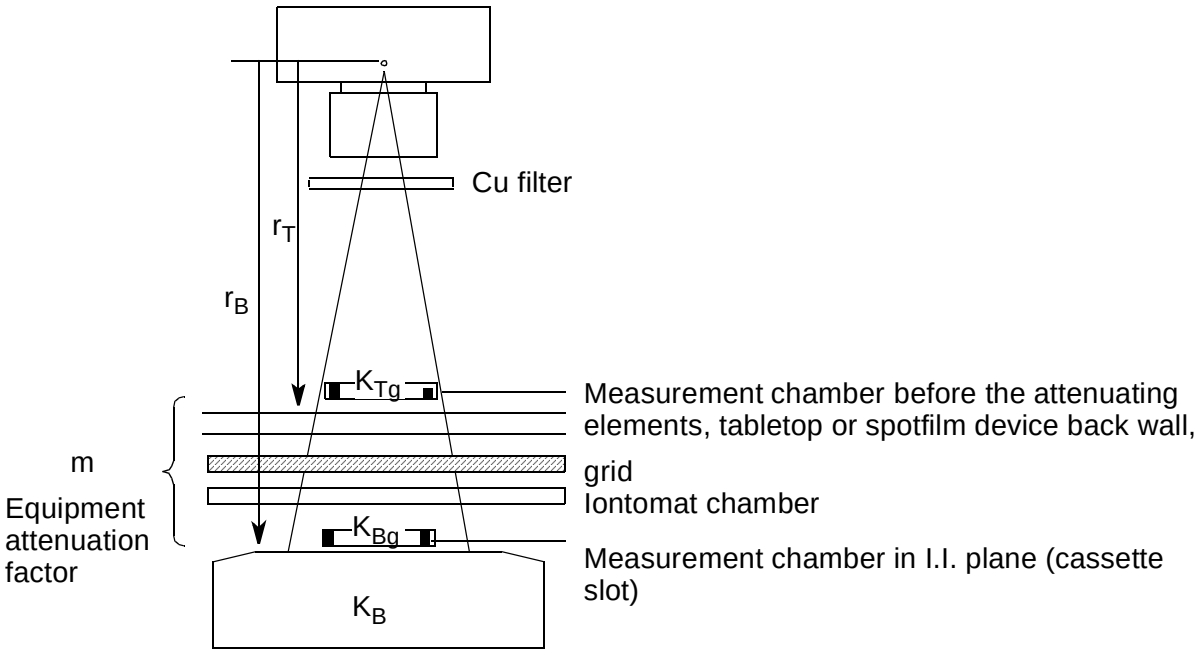
$$K_B = K_{Bg} \times \frac{Q_{g2}}{Q_{g1}} \quad ; \quad K_B = \frac{K_{Tg}}{m} \times \frac{Q_{g2}}{Q_{g1}}$$

Determining the equipment attenuation factor from the individual attenuation factors

Equipment attenuation factor $m = m_T \times m_R \times m_I \times m_A$ .....

Attenuation factor of tabletop, spotfilm device back wall, etc.	m_T
Attenuation factor of the scatter radiation grid	m_R
Attenuation factor of the Iontomat chamber	m_I

Attenuation factor from the distance factor $mA = \left(\frac{r_B}{r}\right)^2$



$K_B/\dot{K}_B$	=	Dose/dose rate measured directly at the I.I. input
$K_{Bg}/\dot{K}_{Bg}$	=	Dose/dose rate measured in the I.I. plane
$K_{Tg}/\dot{K}_{Tg}$	=	Dose/dose rate measured before the attenuating elements
r_B	=	Focus-image receptor distance
r_T	=	Distance between focus and beginning of attenuating elements

Formulas to Calculate Dose/Dose Rate in the Measurement Plane for Adjustment of Dose/Dose Rate

For the adjustment, the dose or dose rate required directly at the I.I. input must be converted from the measurement plane (I.I .plane or before the attenuating elements). For this, use the conversion formulas:

	Dose		**Dose Rate**
Measurement chamber in I.I. plane	$K_{Bg} = \frac{K_B}{0{,}94}$	;	$\dot{K}_{Bg} = \frac{\dot{K}_B}{0{,}94}$
Measurement chamber before attenuating elements	$K_{Tg} = \frac{K_B \times m}{0{,}94}$	;	$\dot{K}_{Tg} = \frac{\dot{K}_B \times m}{0{,}94}$

Remark: The radiation attenuation resulting from the dose measurement chamber is already taken into account during setting
(for adjustment: remove the dose measurement chamber from the beam).
Do not use the factor of 0.94 for **calculating** the dose rate to be set.
If the dose/dose rate is being **checked** (not set), the factor of 0.94 should be taken into account.

Example for determining the correction factor

Correction factor m (total) =
(source-I.I. distance/source-measurement chamber distance)^2
x m-factor (Iontomat chamber) x m-factor (grid)
x m-factor (tabletop etc., if between dose measurement chamber and I.I.) etc.

- Distance correction factor (m_A) =

$$\left(\frac{\text{source-I.I. distance}(r_B)}{\text{source-meas. chamber distance}(r_T)}\right)^2 \quad \text{Example:} \left(\frac{100}{92.5}\right)^2 = 1.17$$

- Grid correction factor (m_R) = 1.7
- IONTOMAT chamber correct. factor (m_I) = 1.1
- Tabletop correction factor (m_T) = 1.1

When setting the dose/dose rate, multiply the dose/dose rate required at the I.I. input by the correction factors.

e.g. 174 nGy/s x (m_A x m_R x m_I x m_T)
174 nGy/s x (1.17 x 1.7 x 1.1 x 1.1) =
174 nGy/s x 2.4 = 408 nGy/s
(1µR=8.7 nGy)

NOTICE

Record the correction factor m in Chapter 4.1 of the "Test Certificate for FL and DFR/DR Systems". The test certificate is filed in the Logbook.

Adjusting the Dose Rate

Refer to Chapter 6 of the Start-Up Instructions, RXL2-120.034...., for settings/tests.

For POLYDOROS SX with optional instant stored image

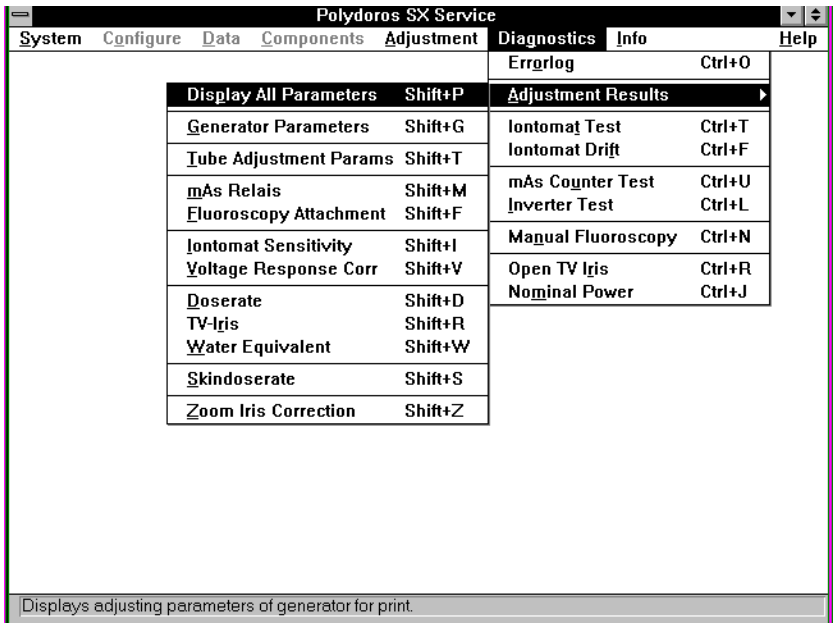
Setting the dose refer to chapter 6, Start-up instructions RXL2-120.034....

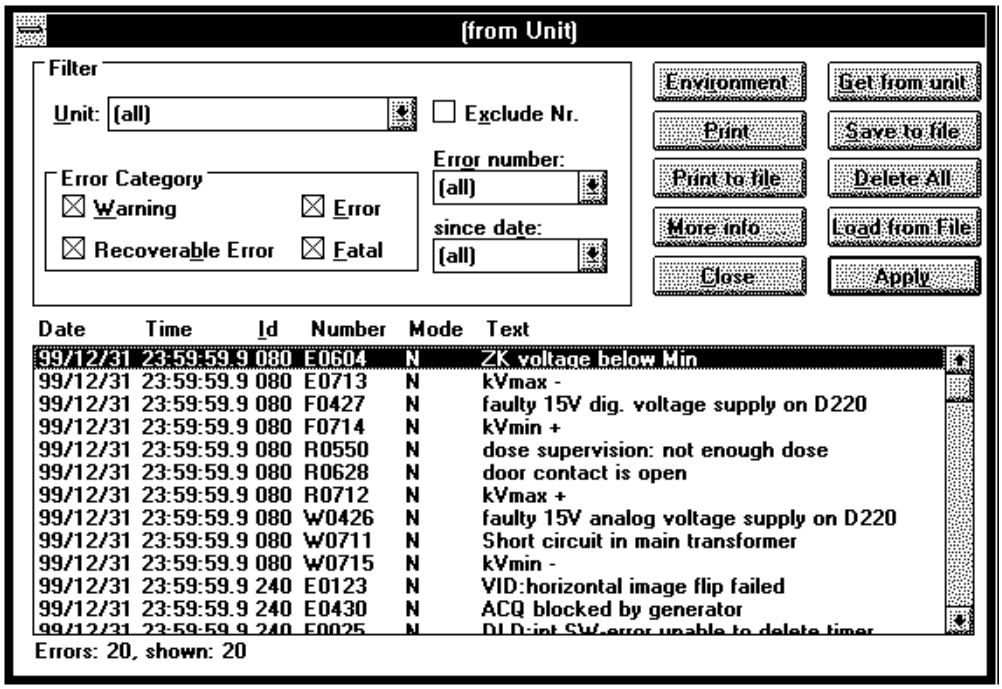
Adjusting the Maximum Skin Dose Rate

NOTICE **Perform this adjustment only in those countries which mandate a limitation of the skin dose rate.**

Refer to Chapter 6 of the Start-Up Instructions, RXL2-120.034...., for settings/tests.

- Select **Adjustment Results** in the "Polydoros .. Service/Diagnostics/" window.




(from Unit)
Filter
Unit: (all)
Exclude Nr.
Error number:
(all)
Error Category
Warning
Error
Recoverable Error
Fatal
since date:
(all)
Environment
Get from unit
Print
Save to file
Print to file
Delete All
More info
Load from File
Close
Apply
Date Time Id Number Mode Text
99/12/31 23:59:59.9 080 E0604 N ZK voltage below Min
99/12/31 23:59:59.9 080 E0713 N kVmax -
99/12/31 23:59:59.9 080 F0427 N faulty 15V dig. voltage supply on D220
99/12/31 23:59:59.9 080 F0714 N kVmin +
99/12/31 23:59:59.9 080 R0550 N dose supervision: not enough dose
99/12/31 23:59:59.9 080 R0628 N door contact is open
99/12/31 23:59:59.9 080 R0712 N kVmax +
99/12/31 23:59:59.9 080 W0426 N faulty 15V analog voltage supply on D220
99/12/31 23:59:59.9 080 W0711 N Short circuit in main transformer
99/12/31 23:59:59.9 080 W0715 N kVmin -
99/12/31 23:59:59.9 240 E0123 N VID:horizontal image flip failed
99/12/31 23:59:59.9 240 E0430 N ACQ blocked by generator
Errors: 20, shown: 20

CAUTION **Press the F1 key and read the help text before performing any steps.**

You can toggle between the help text and the current window at any time using the key combination < ALT > and < TAB >.

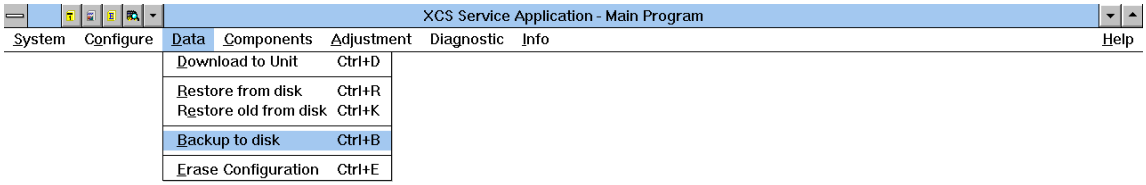
You can exit the help text by pressing < ALT > and < F4 >.

Supplement to the “Save to file” window:
After making the selection, a file manager window opens up and entry of the file name is requested in the form: “max. 8 characters” err
e.g. **elog01.err** or **elog02.err**
You can save the file to the hard drive or to the diskette.

Press the **"More Info"** key for further information about troubleshooting.

CAUTION **After the adjustment is complete, perform a “Back-up”.**

- Insert the back-up diskette in Drive **A**: .
- Select **Backup to disk** in the "XCS Service Application - Main Program/Data/" window.



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XCU Download POLYDOROS SX 65/80

The XCU (boot software) was installed at the factory.

Perform the XCU download only:

1. After modifying the software
2. After replacing the XCU

Perform the download as follows:

- Switch the generator **OFF.**
- Insert the download diskette in the XCU drive (in the generator, refer to Chap. 1, Page 4).
- Switch the generator **ON.**
- Download will be performed automatically.
- Switch the generator **OFF.**
- Remove the download diskette from the XCU drive.
- Switch the generator **ON.**

CAUTION

If the PC is not connected to power but is run only on a battery, ensure that the battery is fully charged (refer to the PC Operating Instructions).
Prior to performing the download, the "system time" must be identical to the PC time (refer to Chap. 3-2 "Connect").

⚠WARNING

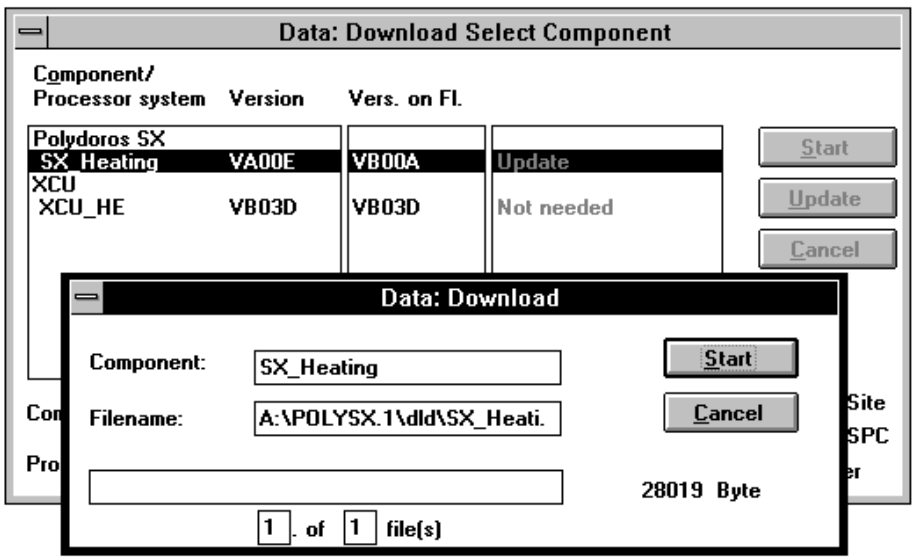
The download for XCU and the D220 filament heating for the generator was performed at the factory.
Perform an XCU download only after:
- **modifying the software**
- **replacing the XCU**

Perform the filament heating download only if:
- **the red LED on D220 is flashing**
- **the software has crashed**

A download is not necessary after the D220 is replaced.

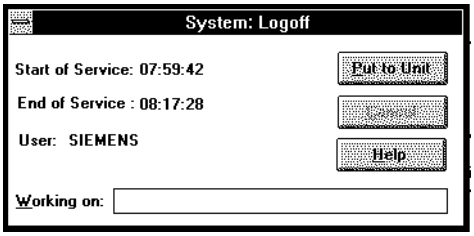
Performing the XCU-Heating Download:

- Insert the download diskette in the **Service PC**.
- Select **Download to Unit** in the "XCS-Service Application - Main Program/Date/" window.
- Select **SX Heating** in the "Data/Download select Component" window.



- Select the **Start Button** in the "Data/Download" window.

- Select **Quit** in the "XCS-Service Application - Main Program/System/" window.



- **Working on:**
  Enter the text desired, e.g. “Start-up”.
  (Texts can be read out in “Main Program / Info”).
- Switch the generator **OFF / ON.**

CAUTION	**Perform a “Backup” after the adjustment has been completed.**

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Chap. 0	Cover page, revision level and table of contents were updated
Chap. 1 - 1	Prerequisites and Remarks: Sentence newly included
Chap. 4	Page 4-3 * Text supplements newly included Page 4-5 * Text newly included Page 4-6 * Text newly included Page 4-7 * Text newly included and text in table newly added Page 4-8, point: Sentence newly included, text in brackets newly added Page 4-9 Text in brackets newly added Page 4-10 * and ** text newly included Page 4-11 * Text newly included
Chap. 5 - 2	Para: DIAMENTOR MS alignment..... deleted

TD PS 24/ Erlwein
TD SP/ M. Heinlein
SMS / Iselin

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